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EXAMINER

SQUIRES, BRETT S

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/584,887	<b>Applicant(s)</b> WHITE, DAVID	
	<b>Examiner</b> BRETT SQUIRES	<b>Art Unit</b> 2431	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 29 June 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-33 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 June 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>09/18/06</u> .  | 6) <input type="checkbox"/> Other: _____                          |

***Specification***

1. The disclosure is objected to because of the following informalities: the specification does not clearly identify the subject matter being incorporated by reference. The specification states on page 2 that "The disclosures of all references mentioned above and throughout the present specification, as well as the disclosures of all references mentioned in those references, are hereby incorporated herein by reference." The references cited by the references cited in specification are not clearly identified in the specification and therefore their incorporation by reference is improper. See 37 CFR 1.57(b). Appropriate correction is required.

***Claim Objections***

2. Claim 16 is objected to because of the following informalities: claim 16 recites "a presentation time stamp (PTS)," on page 4 line 28 of the preliminary amendment filed June 29, 2006 and "a PTS value," on page 4 line 31 of the preliminary amendment filed June 29, 2006 it is unclear whether the recited claim limitations are intended to refer to the same presentation time stamp. Appropriate correction is required.

3. Claim 20 is objected to because of the following informalities: claim 20 recites "decoding time stamp (DTS)," on page 5 line 21 of the preliminary amendment filed June 29, 2006 and "a DTS value," on page 5 line 26 of the preliminary amendment filed June 29, 2006 it is unclear whether the recited claim limitations are intended to refer to the same decoding time stamp. Appropriate correction is required.

Art Unit: 2431

4. Claim 24 is objected to because of the following informalities: claim 24 recites “a presentation time stamp (PTS),” on page 6 line 16 of the preliminary amendment filed June 29, 2006 and “a PTS value,” on page 6 line 20 of the preliminary amendment filed June 29, 2006 it is unclear whether the recited claim limitations are intended to refer to the same presentation time stamp. Appropriate correction is required.

5. Claim 28 is objected to because of the following informalities: claim 28 recites “a presentation time stamp (PTS),” on page 7 line 22 of the preliminary amendment filed June 29, 2006 and “a PTS value,” on page 7 line 25 of the preliminary amendment filed June 29, 2006 it is unclear whether the recited claim limitations are intended to refer to the same presentation time stamp. Appropriate correction is required.

6. Claim 29 is objected to because of the following informalities: claim 29 recites “a presentation time stamp (PTS),” on page 8 line 20 of the preliminary amendment filed June 29, 2006 and “a PTS value,” on page 8 line 24 of the preliminary amendment filed June 29, 2006 it is unclear whether the recited claim limitations are intended to refer to the same presentation time stamp. Appropriate correction is required.

7. Claim 32 is objected to because of the following informalities: claim 32 recites “a presentation time stamp (PTS),” on page 9 line 31 of the preliminary amendment filed June 29, 2006 and “a PTS value,” on page 10 line 2 of the preliminary amendment filed June 29, 2006 it is unclear whether the recited claim limitations are intended to refer to the same presentation time stamp. Appropriate correction is required.

8. Claim 33 is objected to because of the following informalities: claim 33 recites “a decoding time stamp (DTS),” on page 10 line 13 of the preliminary amendment filed

Art Unit: 2431

June 29, 2006 and "a DTS value," on page 10 line 18 of the preliminary amendment filed June 29, 2006 it is unclear whether the recited claim limitations are intended to refer to the same decoding time stamp. Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

9. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

10. Claims 16-29 and 32-33 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap between the elements. See MPEP § 2172.01.

Claims 16 and 28 omit a step for receiving a presentation time stamp. In order for the timecode use method to function properly an unencrypted presentation time stamp must be received so that a system time clock can be compared the presentation time stamp before the plurality of encrypted timecodes are decrypted. While claim 16 does recite "each of the plurality of encrypted timecodes being associated with a presentation time stamp," this recitation does not perform the missing acts. The plurality of encrypted timecodes being associated with a presentation time stamps is construed to mean that the timecodes and the presentation time stamp are part of the same data stream, the timecodes and the presentation time stamp are generated using the same time basis, or the timecodes and the presentation time stamp are used during the same operation such as video playback.

Art Unit: 2431

Claims 20 and 33 omit a step for receiving a decoding time stamp. In order for the timecode use method to function properly an unencrypted decoding time stamp must be received so that a system time clock can be compared the decoding time stamp before the plurality of encrypted timecodes are decrypted. While claim 20 does recite "each of the plurality of encrypted timecodes being associated with a decoding time stamp," this recitation does not perform the missing acts. The plurality of encrypted timecodes being associated with a decoding time stamps is construed to mean that the timecodes and the decoding time stamp are part of the same data stream, the timecodes and the decoding time stamp are generated using the same time basis, or the timecodes and the decoding time stamp are used during the same operation such as video playback.

Claims 24, 29, and 32 omit an input unit operative to receive a presentation time stamp. In order for the timecode handler to operate properly an unencrypted presentation time stamp must be received so that the decryptor can compare a system time clock with the presentation time stamp before the plurality of encrypted timecodes are decrypted. While claim 24 does recite "each of the plurality of encrypted timecodes being associated with a presentation time stamp," this recitation does not provide the missing structure. The plurality of encrypted timecodes being associated with a presentation time stamps is construed to mean that the timecodes and the presentation time stamp are part of the same data stream, the timecodes and the presentation time stamp are generated using the same time basis, or the timecodes and the presentation time stamp are used during the same operation such as video playback.

***Claim Rejections - 35 USC § 102***

11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

12. Claims 1, 3-6, 8-11, 13-16, 18-20, 22-24, and 26-33 are rejected under 35 U.S.C. 102(b) as being anticipated by Thatcher et al. (US 5,937,067) and ISO/IEC 13818-1. The examiner respectfully points out that the ISO/IEC 13818-1 standard has been incorporated by reference into Thatcher in col. 4 lines 33-37.

Regarding Claim 1:

Thatcher discloses a conditional access cable television system that receives an encryption key ("Global Seeds" See fig. 4 ref. no. 94 and col. 4 lines 38-61) and an implemented encryption method ("The same global seeds are used for encrypted and decrypting data, accordingly a symmetric encryption method is implemented." See col. 5 lines 14-16 and 28-29), for each one of a plurality of frames receiving a timecode ("Time Code" See ISO/IEC 13818-1 page 106) and an associated presentation time stamp associated with the one frame ("Video and audio data are prepared in the form of a packetized elementary stream having a header, a presentation time stamp, and the video itself." See col. 4 lines 25-37), for each one of the plurality of frames encrypting the timecode associated with the one frame using the encryption key ("The packetized elementary stream is allocated into the payload section of one or transport packets" See

Art Unit: 2431

col. 4 lines 27-37 and "The entirety of the services portion of data frame is encrypted under a global seed." See col. 5 lines 28-29) and the implemented encryption method thereby producing a plurality of encrypted timecodes ("The encryption of the entire packetized elementary stream includes encryption of the timecodes." See fig. 4 and col. 5 lines 28-29), and at a time associated with the associated PTS associated with the one frame outputting a packetized elementary stream comprising the plurality of encrypted timecodes ("Program Reference Clock" See fig. 4 ref. no. PCR and ISO/IEC 13818-1 page 4).

Regarding Claims 3, 8, 13, 18, 22, and 26:

Thatcher discloses the implemented encryption method comprises a symmetric key ("The same global seeds are used for encrypted and decrypting data, accordingly a symmetric encryption method is implemented." See col. 5 lines 14-16 and 28-29).

Regarding Claims 4, 9, 14, 19, 23, and 27:

Thatcher discloses the timecode comprises an offset from a broadcast headend station time ("Each program in a transport stream may contain multiple program, may have its own time base." See ISO/IEC 13818-1 page XVI).

Regarding Claims 5, 10, and 15:

Thatcher discloses the one frame comprises at least one of the following video, audio, and data ("Video and audio data are prepared in the form of a packetized elementary stream and the multiplexer/encryptor combines the packets into a frame of data see col. 4 lines 24-37).

Regarding Claim 6:



Thatcher discloses a conditional access cable television system that receives an encryption key ("Global Seeds" See fig. 4 ref. no. 94 and col. 4 lines 38-61) and an implemented encryption method ("The same global seeds are used for encrypted and decrypting data, accordingly a symmetric encryption method is implemented." See col. 5 lines 14-16 and 28-29), for each one of a plurality of frames receiving a timecode ("Time Code" See ISO/IEC 13818-1 page 106) and an associated decoding time stamp associated with the one frame ("The PES packet header may contain decoding and presentation time stamps." See ISO/IEC 13818-1 page 8), the DTS occurring in advance of a presentation time stamp associated with the one frame ("The examiner respectfully points out that it is inherent that the video and audio data must be decoded before the video and audio data are presented."), for each one of the plurality of frames encrypting the timecode associated with the one frame using the encryption key ("The packetized elementary stream is allocated into the payload section of one or transport packets" See col. 4 lines 27-37 and "The entirety of the services portion of data frame is encrypted under a global seed." See col. 5 lines 28-29) and the implemented encryption method thereby producing a plurality of encrypted timecodes ("The encryption of the entire packetized elementary stream includes encryption of the timecodes." See fig. 4 and col. 5 lines 28-29), and at a time associated with the associated DTS associated with the one frame outputting a packetized elementary stream comprising the plurality of encrypted timecodes not being effective until a time associated with the PTS associated with the one frame ("Program Reference Clock" See fig. 4 ref. no. PCR and ISO/IEC 13818-1 page 4).

Art Unit: 2431

Regarding Claims 11 and 30:

Thatcher discloses a timecode generator ("Multiplexer/Encryptor" See fig. 4 ref. no. 64) having a first input unit operative to receive an encryption key and an implemented encryption method ("The entirety of the services portion of data frame is encrypted under a global seed." See col. 5 lines 28-29 "The examiner respectfully points out that it is inherent that the multiplexer/encryptor has a first input unit for receiving the global seed."), a second input unit operative to receive a timecode and an associated presentation time stamp for each one of a plurality of frames (See fig. 4 ref. nos. Video 1 and Audio 1), an encryptor operative to encrypt the timecode for each one of the plurality of frames using the encryption key and the implemented encryption method thereby producing a plurality of encrypted timecodes ("The encryption of the entire packetized elementary stream includes encryption of the timecodes." See fig. 4 and col. 5 lines 28-29), and a packetized elementary stream outputter operative to receive a plurality of encrypted timecodes and at a time associated with the associated presentation time stamp associated with the one frame to output a PES comprising the plurality of encrypted timecodes ("Transport Data Stream" See fig. 4 ref. no. TDS).

Regarding Claim 16:

Thatcher discloses timecode use method of receiving an application file ("Entitlement Control Message" See col. 4 lines 38-61) comprising a decryption key and an implemented decryption ("Seed data encrypted under a multi-session key is included in the data transmitted in the entitlement control message." See col. Lines 38-61), receiving a packetized elementary stream ("The packetized elementary stream is

Art Unit: 2431

allocated into the payload section of one or more transport packets." See col. 4 lines 29-31 and "Payload portions of the transport data stream are provided to the decryptor" See col. 4 line 67 and col. 5 line 1) comprising a plurality of encrypted timecodes each of the plurality of timecodes being associated with a presentation time stamp ("Program Clock Reference" See fig. 4 ref. no. PCR and "Decoding Timestamp," "Presentation Time Stamp," See ISO/IEC 13818-1 page 6), running the application file ("Decryptor processes entitlement control message to recover a plurality of seeds." See col. 5 lines 13-15), the running comprising performing the following when a system time clock value equals a presentation time stamp value associated with at least one of the plurality of encrypted timecodes ("The presentation time stamp indicates the time of presentation in the system target decoder based on the period of the system clock." See ISO/IEC 13818-1 page 35), decrypting the encrypted timecode associated with the presentation value using the decryption key and the implemented encryption method ("The encrypted portion of data frame is processed in the decryptor using a global seed." See col. 5 lines 29-31), thereby producing a decrypting timecode ("The examiner respectfully points out that the decryption of entire packetized elementary stream includes encryption of the timecodes.").

Regarding Claims 20, 31, and 33:

Thatcher discloses a timecode use method of receiving an application file ("Entitlement Control Message" See col. 4 lines 38-61) comprising a decryption key and an implemented decryption method ("Seed data encrypted under a multi-session key is included in the data transmitted in the entitlement control message." See col. Lines 38-

Art Unit: 2431

61), receiving a packetized elementary stream ("The packetized elementary stream is allocated into the payload section of one or more transport packets." See col. 4 lines 29-31 and "Payload portions of the transport data stream are provided to the decryptor" See col. 4 line 67 and col. 5 line 1) comprising a plurality of encrypted timecodes each of the plurality of encrypted timecodes being associated with a decoding time stamp ("Program Clock Reference" See fig. 4 ref. no. PCR and "Decoding Timestamp," "Presentation Time Stamp," See ISO/IEC 13818-1 page 6), at least one of the plurality of encrypted timecodes requiring that a displayed be updated at one of a plurality of presentation time stamps ("The display of a video presentation unit (a picture) occurs instantaneously at its presentation time." See ISO/IEC page 17), running the application file ("Decryptor processes entitlement control message to recover a plurality of seeds." See col. 5 lines 13-15), the running comprising performing the following when a system time clock value equals a decoding time stamps value associated with at least one of the plurality of encrypted timecodes ("Decoding time-stamp; DTS (system): A field that may be present in a PES packet header that indicates the time that an access unit is decoded in the system target decoder." See ISO/IEC page 3), decrypting the encrypted timecode associated with the decoding timestamp value using the decryption key and the implemented encryption method thereby producing a decrypted timecode method ("The encrypted portion of data frame is processed in the decryptor using a global seed." See col. 5 lines 29-31 and "The examiner respectfully points out that the decryption of entire packetized elementary stream includes encryption of the timecodes."), and updating the display at the one of the plurality of presentation

Art Unit: 2431

timestamps ("The display of a video presentation unit (a picture) occurs instantaneously at its presentation time." See ISO/IEC page 17).

Regarding Claims 24 and 32:

Thatcher discloses a timecode handler ("Decoder" See fig. 5 ref. no. 70) having a first input unit operative to receive at least one application file comprising a decryption key and an implemented encryption method ("De-Multiplexer" See fig. 5 ref. no. 72 and col. 4 lines 62-66), a second input unit operative to receive a packetized elementary stream comprising a plurality of encrypted timecodes each of the plurality of encrypted timecodes being associated with a presentation timestamp ("Global PRBS" See fig. 5 ref. no. 104 and col. 5 lines 14-37), and a decryptor receiving each of the plurality of encrypted timecodes and operative to decrypt each of the plurality of encrypted timecodes using the decryption key ("Global PRBS" See fig. 5 ref. no. 104 and col. 5 lines 14-37) and the implemented encryption method when a system time clock value equals a presentation time stamp value associated with each of the plurality of encrypted timecodes ("The presentation time stamp indicates the time of presentation in the system target decoder based on the period of the system clock." See ISO/IEC 13818-1 page 35).

Regarding Claim 28 and 29:

Thatcher discloses a method for timeline protection of receiving at a timecode generator ("Multiplexer/Encryptor" See fig. 4 ref. no. 64) an encryption key and an implemented encryption method ("The entirety of the services portion of data frame is encrypted under a global seed." See col. 5 lines 28-29 "The examiner respectfully points

Art Unit: 2431

out that it is inherent that the multiplexer/encryptor has a first input unit for receiving the global seed."), for each one of a plurality of frames receiving at the timecode generator a timecode ("Time Code" See ISO/IEC 13818-1 page 106) and an associated presentation time stamp associated with the one frame ("Video and audio data are prepared in the form of a packetized elementary stream having a header, a presentation time stamp, and the video itself." See col. 4 lines 25-37), for each one of the plurality of frames encrypting at the timecode generator the timecode associated with the one frame using the encryption key ("The packetized elementary stream is allocated into the payload section of one or transport packets" See col. 4 lines 27-37 and "The entirety of the services portion of data frame is encrypted under a global seed." See col. 5 lines 28-29) and the implemented encryption method thereby producing a plurality of encrypted timecodes ("The encryption of the entire packetized elementary stream includes encryption of the timecodes." See fig. 4 and col. 5 lines 28-29), at a time associated with the associated presentation time stamp associated with the one frame outputting a packetized elementary stream comprising the plurality of encrypted timecodes ("Program Reference Clock" See fig. 4 ref. no. PCR and ISO/IEC 13818-1 page 4), receiving at a timecode handler ("Decoder" See fig. 5 ref. no. 70) an application file ("Entitlement Control Message" See col. 4 lines 38-61) comprising a decrypting key and an implemented decryption method ("Seed data encrypted under a multi-session key is included in the data transmitted in the entitlement control message." See col. Lines 38-61), receiving at the timecode handler the packetized elementary stream comprising a plurality of encrypted timecodes each of the plurality of timecodes being associated with

Art Unit: 2431

a presentation timestamp ("The packetized elementary stream is allocated into the payload section of one or more transport packets." See col. 4 lines 29-31 and "Payload portions of the transport data stream are provided to the decryptor" See col. 4 line 67 and col. 5 line 1), running the application file ("Decryptor processes entitlement control message to recover a plurality of seeds." See col. 5 lines 13-15), the running comprising at the application file performing the following when a system time clock value equals a presentation timestamp value associated with at least one of the plurality of encrypted timecodes ("The presentation time stamp indicates the time of presentation in the system target decoder based on the period of the system clock." See ISO/IEC 13818-1 page 35), and decrypting the encrypted timecode associated with the presentation timestamp value using the decryption key and the implemented encryption method, thereby producing a decrypted timecode ("The encrypted portion of data frame is processed in the decryptor using a global seed." See col. 5 lines 29-31 and "The examiner respectfully points out that the decryption of entire packetized elementary stream includes encryption of the timecodes.").

### ***Claim Rejections - 35 USC § 103***

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 2431

8. Claims 2, 7, 12, 17, 21, and 25 are rejected under 35 U.S.C. 103(a) as being obvious over Thatcher et al. (US 5,937,067) in view of Kulig et al (US 2003/0110229).

Thatcher discloses the above stated timecode generation method that encrypts the timecode associated with the one frame using a symmetric encryption method ("The same global seeds are used for encrypted and decrypting data, accordingly a symmetric encryption method is implemented." See col. 5 lines 14-16 and 28-29).

Thatcher does not disclose the using an asymmetric encryption method.

Kulig discloses a method for transmitting data packets over an information network that uses an encrypts an asymmetric encryption method (See paragraph 16) to encrypt the control information in a packetized elementary stream (See paragraphs 139-142).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the timecode generation method disclosed by Thatcher to use an asymmetric encryption method such as that taught by Kulig in order provide a more secure key solution (See Kulig paragraph 16).



***Conclusion***

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to BRETT SQUIRES whose telephone number is (571) 272-8021. The examiner can normally be reached on 9:30am - 6:00pm Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ayaz Sheikh can be reached on (571) 272-3795. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/BS/

/Christopher A. Revak/  
Primary Examiner, Art Unit 2431